

The Current State of Urological Education for Medical Students

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Abstract

Introduction: Providing medical students with a basic urological education is important as the geriatric population expands and the need for urological care increases. In the last decades there have been considerable changes to medical school curricula and graduation requirements that may impact medical student exposure to urology. We reviewed the literature pertaining to urological education for medical students in the United States.

Methods: We searched the PubMed® and Medline® databases to identify articles pertaining to medical student education in urology. We summarized these articles according to 4 themes, including 1) medical student electives in urology, 2) medical student career interest in urology, 3) new interventions in urology education and 4) the urology match.

Results: We identified 25 articles, which showed that 1) medical student exposure to urology has markedly declined, 2) medical students remain highly interested in pursuing a career in urology, 3) the AUA (American Urological Association) medical student curriculum has provided a key resource for medical school urological education and 4) applying for urology residency may be expensive and challenging.

Conclusions: Medical school urological education has changed in the last decades. Although it appears that fewer medical students are required to rotate through urology, new materials are available to educate medical students in urology and many students are highly interested in pursuing a career in the field.

Key Words: urology; students, medical; curriculum; career choice; internship and residency

Population studies have clearly demonstrated a growing geriatric population in the United States with a subsequent increase in demand for the management of chronic and acute urological conditions.¹ Basic urological training for all medical students is imperative to meet this need. As a small surgical

subspecialty, the field of urology faces unique challenges to ensure that medical students receive a sufficient urological education. A body of literature has emerged investigating the adequacy of urological training during medical school as well as the factors that motivate students to enter urology residency.

Submitted for publication May 11, 2015.

No direct or indirect commercial incentive associated with publishing this article.

The corresponding author certifies that, when applicable, a statement(s) has been included in the manuscript documenting institutional review board, ethics committee or ethical review board study approval; principles of Helsinki Declaration were followed in lieu of formal ethics committee approval;

institutional animal care and use committee approval; all human subjects provided written informed consent with guarantees of confidentiality; IRB approved protocol number; animal approved project number.

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97 Currently, to our knowledge no article has provided a
98 comprehensive and succinct review of this literature. To
99 this end we reviewed the current data on urological educa-
100 tion and identified areas for further study. Of note, data on
101 urological education for residents and fellows were
102 reviewed in a companion study.

103 **Materials and Methods**

104 We performed a literature review of urological education
105 for medical students by searching the PubMed and Med-
106 line databases for articles pertaining to medical school
107 urological education that were published between 1956
108 and 2014. The key words used for the search included
109 medical student urology, urology elective, urology student
110 training, urology match, urology curriculum and urology
111 student education.

112 Studies were grouped and reviewed according to 4 central
113 themes that emerged from the literature, including 1) urol-
114 ogy electives in medical school curricula, 2) medical student
115 career interest in urology, 3) new interventions in urology
116 education and 4) the urology match.

117 **Results**

118 We identified 25 articles pertaining to medical student
119 urological education and they were used in this literature
120 review.

121 **Discussion**

122 *Urology Electives in Medical School Curricula*

123 Although there has been an increased demand for urological
124 care in the United States, 6 decades of studies have consis-
125 tently demonstrated that formal urology education in medical
126 schools is decreasing. In 1956 the first investigation of urol-
127 ological education in medical school curricula was done.² At
128 that time 99% of schools mandated a urology rotation and
129 79% provided more than a total of 10 urology focused lec-
130 tures. Two decades later in 1978 Rous and Mendelson per-
131 formed the same investigation in response to the growing
132 concern of AUA that student exposure to the field was
133 declining.³ They found that only 48% of schools included
134 urology in the core curriculum. Despite initial calls to improve
135 exposure by urologists, internists and pediatricians⁴ followup
136 studies in 1988⁵ and 1994⁶ showed that even fewer school
137 (32% to 38%) required a urology rotation to graduate.

138 More recent studies have revealed a continued decline in
139 medical student urological education. In 2004 Kerfoot et al

140 surveyed 321 applicants to the urology match and 527
141 emergency medicine applicants on medical school urology
142 experience with a 55% response rate.⁷ They found that only
143 17% of medical schools had a required urology rotation,
144 which most commonly occurred as a 1 to 2-week block
145 during the third year. There was no association between a
146 medical school offering a rotation in urology with
147 geographic location, U.S. News & World Report® ranking
148 or the presence of a ACGME (Accreditation Council for
149 Graduate Medical Education) accredited urology residency
150 at the same institution.

151 In 2008 a survey of urology residency program directors
152 with a 81% response rate identified an absence of pre-
153 clinical urology lectures in 32% of medical schools and a
154 lack of urology lectures during physical examination
155 teaching in 50%.⁸ Using these data there was a 65%
156 chance that a student could graduate with a medical degree
157 without any exposure to urology. The latest and most
158 concerning data come from a 2014 survey of 41 randomly
159 selected medical schools, which showed that only 5%
160 mandated a urology rotation to graduate according to the
161 80% survey response.⁹

162 Urology along with other surgical subspecialties faces the
163 challenges of establishing itself as part of a comprehensive
164 medical school curriculum. Explanations for the decline in
165 formal urology rotations include pressure to decrease total
166 time spent in surgical subspecialties across most medical
167 schools⁹ and crossover education in more centralized
168 clerkships such as gynecology, general surgery and primary
169 care.⁷ Regardless, innovative opportunities to expand a the
170 student urological education must remain available to recruit
171 the best candidates possible to the field.⁷⁻⁹

172 *Medical Student Career Interest in Urology*

173 Despite the decrease in formal urological education during
174 medical school, medical students remain interested in pur-
175 suing urology residency and the AUA match remains
176 competitive with a 68% match rate in January 2015.¹⁰

177 Urology match data from 2001 to 2005 demonstrated no
178 statistically significant relationship between a required
179 urology rotation during medical school and whether the
180 medical students of the school applied for urology residency
181 or were successfully matched.⁷ Interestingly, with a 48%
182 survey response rate only 25% of applicants to the 2003 to
183 2004 urology match cited clinical urology exposure as a
184 cause for pursuing the speciality.¹¹ Independent variables
185 associated with the success of a medical school in matching
186 a student into urology from the 2005 to 2009 match included
187 a mandatory clinical rotation, a longer rotation and
188

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